

## Notes on the Melyridae (Coleoptera) of Micronesia

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**Abstract** Eight species belonging to three genera of the Melyridae from Micronesia are enumerated. Among them, *Laius etsukoe* and *L. keiichii* are described as new species, *Laius palauensis* WITTMER and *L. yapensis* WITTMER are transferred to the genus *Intibia*, and some new distributions are recorded. A key to the known genera from Micronesia is given.

In Micronesia, five species belonging to two genera of the family Melyridae were recorded by WITTMER (1958, 1970). Since then this family has not been recorded again from their localities.

OHBAYASHI collected a melyrid species in the Ogasawara Islands from 1994 to 2003, and almost at the same time SATÔ collected melyrid specimens in Palau in 2002 and 2003. Besides, through the courtesy of Dr. Keiichi TAKAHASHI and Dr. Masaaki TOMOKUNI, we were fortunately able to examine some additional specimens of the family.

Based on the results, we will report on the Micronesian Melyridae in the following paragraph, with descriptions of two new species of the genus *Laius*, two new combinations in the genus *Intibia* and some new records of distribution.

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Holotypes and some paratypes are preserved in the collection of the Entomological Laboratory, Faculty of Agriculture, Ehime University, Matsuyama, Japan. Other paratypes are preserved in the collections of the National Science Museum, Tokyo, Kurashiki Museum of Natural History and the authors.

### Key to the Genera of Micronesian Melyridae

- 1(2) Body elongate, legs rather long. Antennae filiform. Most segments of abdomen exposed from elytral apices. .... *Carphurus* ERICHSON, 1840
- 2(1) Body oblong, legs moderate in length. Antennae of 1st and 3rd segments swelling. At least terminal segment of abdomen exposed from elytral apices. .... 3
- 3(4) Protibia thickened basally with the basal area distinctly hollowed inside in male. Elytra concolorous, with greenish or bluish luster. .... *Laius* GUÉRIN-MÉNEVILLE, 1830
- 4(3) Protibia simple. Elytra provided with stripes or markings of different color. .... *Intibia* PASCOE, 1866

### *Carphurus reductipennis* WITTMER

*Carphurus reductipennis* WITTMER, 1958, Ins. Micrones., 16: 70 [Ponape].

*Specimen examined.* No additional specimen examined.

*Distribution.* Mariana (Tinian), Caroline (Ponape).

### *Laius marchei* PIC

*Laius marchei* PIC, 1922, Bull. Mus. Hist. nat., Paris, 28: 158 [Marianna].

*Rotamalachus esakii* KÔNO, 1937, Annotnes. zool. japon., 12: 121 [Rota].

*Specimens examined.* 1♂, Rota, Tatachis, 8-VIII-1940, Coll. Dengo MATUSHITA; 1♀, Is. Rota, Mariana, 8-VIII-1940, D. MATUSHITA leg.; 28 exs., Teteto Beach, Rota Is., Mariana Is., 22-I-1980, M. TOMOKUNI leg.

*Distribution.* Mariana (Rota).

*Notes.* This species seems to be common on the rocky sea shore.

### *Laius cyaneus* GUÉRIN-MÉNEVILLE

*Laius cyaneus* GUÉRIN-MÉNEVILLE, 1830, Voy. Duperrey Coquille, Ent., 78, Atlas Ins., t. 2, f. 10 [Nouvelle-Hollande].

*Malachus heterocerus* BOISDUVAL, 1835, Voy. Durvill Astrolabe, Ins. Coleopt., 2: 136 [Nouvelle-Hollande].

*Specimen examined.* No additional specimen examined.

*Distribution.* E. Indies, New Guinea, Key Is., New Caledonia, Caroline (Kusaie).

*Laius etsukoe* sp. nov.

(Figs. 1, 2, 7, 9, 11, 13, 15, 17)

*Type series.* Holotype: ♂, Merir, Palau, 24-XII-2002, K. TAKAHASHI leg. Paratypes: 19♂♂, 7♀♀, same data as for the holotype, genitalia and antennae on slide nos. HY 1034, 1035.

*Additional specimens examined.* 4♂♂, Sonsorol, Palau, 4-VII-2003, K. TAKAHASHI leg.

*Description.* Male. Length: 3.4–4.5 mm; breadth: 1.4–2.1 mm. Body oblong, almost black, sometimes tinged with weak bluish luster on pronotum and with bluish to purplish luster on elytra. Mouth parts yellowish brown; clypeus yellowish; three basal segments of antennae yellowish orange. Dorsal surface covered closely with whitish pubescence, intermixed with sparse and rather long blackish bristles. Ventral surface and legs closely covered with whitish pubescence.

Head with eyes narrower than pronotum, almost as broad as long, closely and finely punctate; vertex somewhat flattened. Eyes lateral, separated from each other by about 4.0 times their own diameter. Antennae stout; 1st segment the longest, about 2.4 times as long as broad, expanded terminally; 2nd hidden; 3rd about 1.7 times as long as broad, both lateral sides emarginate; 4th to 11th moniliform.

Pronotum narrower than elytra, about 1.4 times as broad as long, broadest at about apical third, lateral sides gently rounded; each angle rounded; surface closely and finely punctate.

Elytra about 1.4 times as long as broad, broadest at the apical third, lateral sides gradually expanded posteriad; surface sparsely and shallowly punctate, integument micro-reticulate.

Apical margin of 8th tergite shallowly concave. Aedeagus stout, gently tapered, with slightly concave apex; spine almost straight; spiculum distinctly narrowed, with sharp apices.

Female. Length: 3.7–4.5 mm; breadth: 1.6–1.8 mm. Antennae rather slender; 1st segment the longest, about 2.5 times as long as broad, 3rd somewhat simple, about 2.0 times as long as broad. Pronotum about 1.3 times as broad as long. Elytra about 1.5 times as long as broad.

*Distribution.* Caroline, Palau (Merir, Sonsorol).

*Remarks.* This species is closely related to *Laius cyaneus* GUÉRIN-MÉNEVILLE, but can be separated from it by the 3rd segment of antennae much smaller and male genitalia stout.

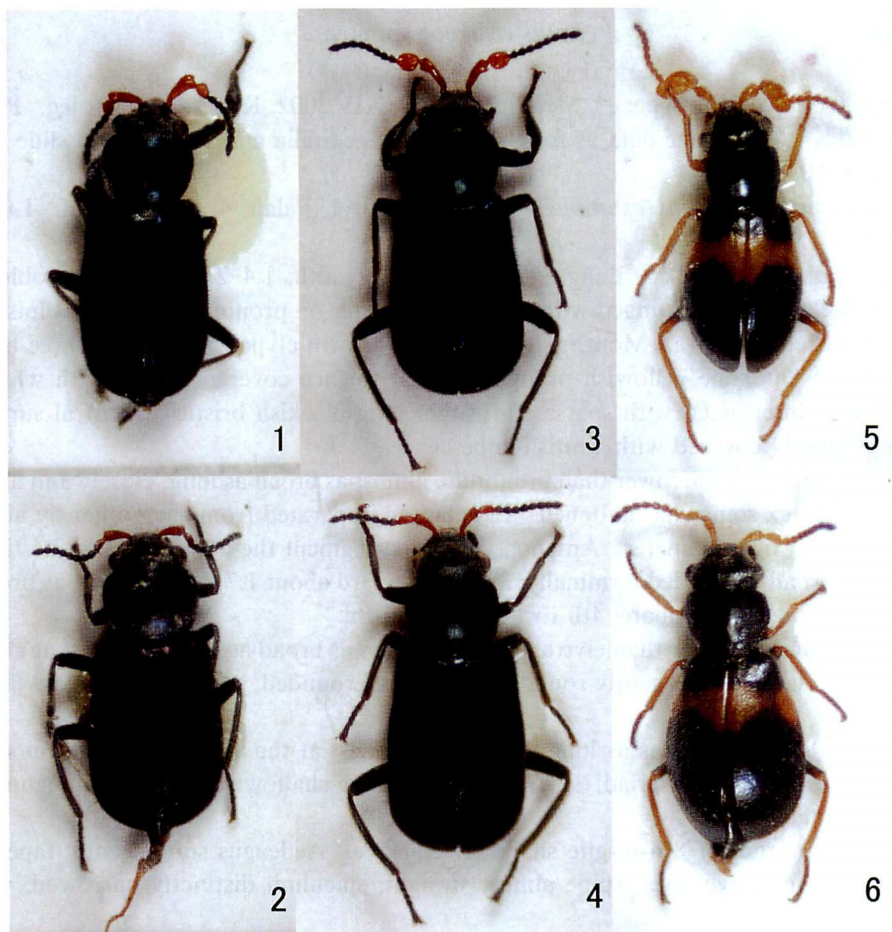
*Etymology.* The specific name is given after Etsuko, wife of Dr. K. TAKAHASHI, supporting his collecting trips on every occasion.

*Laius keiichii* sp. nov.

(Figs. 3, 4, 8, 10, 12, 14, 16, 18)

*Type series.* Holotype: ♂, Peleliu, Palau, 26-X-2002, K. TAKAHASHI leg., genita-





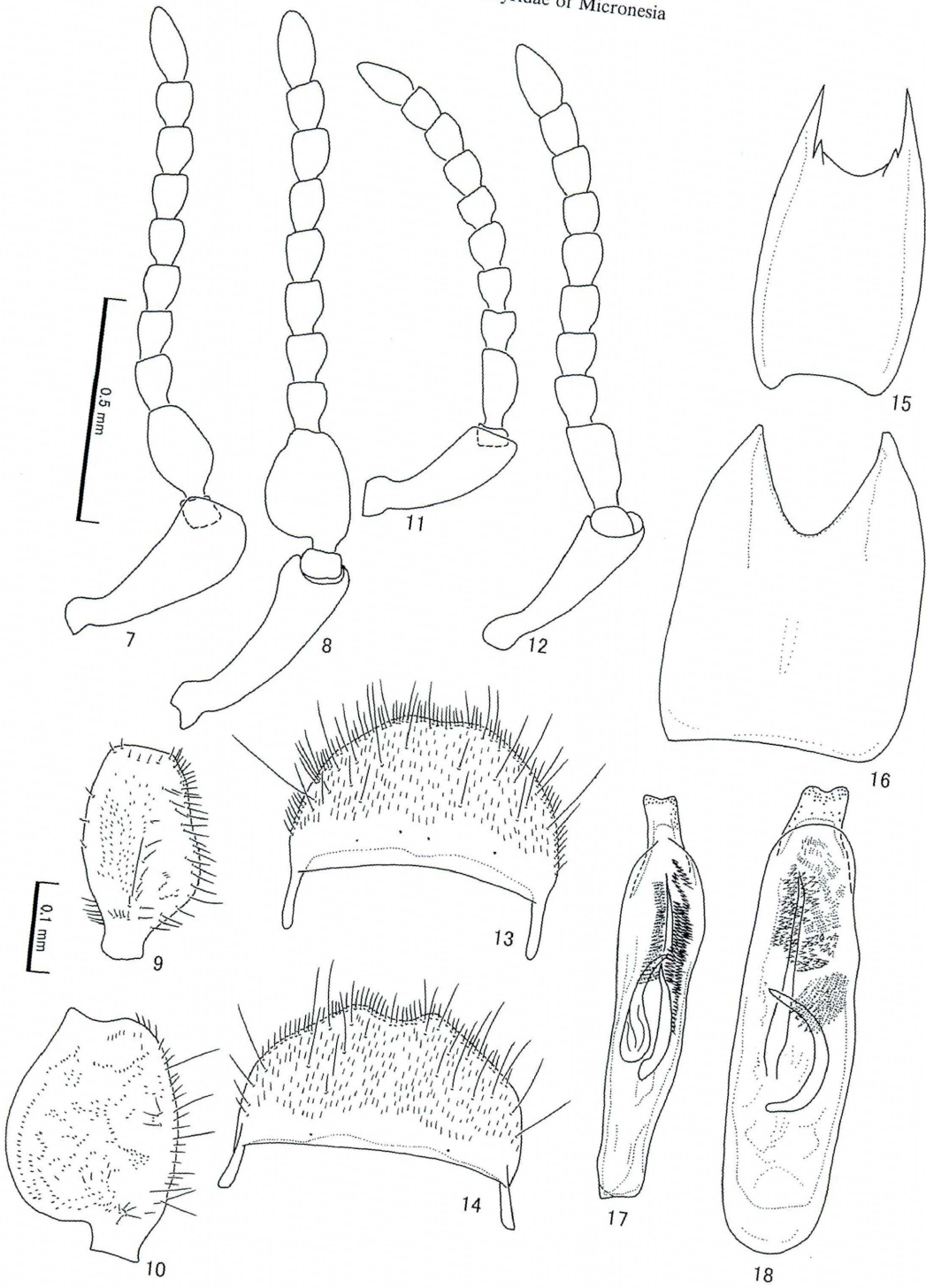
Figs. 1–6. Habitus of melyrid beetles. — 1–2, *Laius etsukoae* sp. nov. (paratypes); 3–4, *Laius keiichii* sp. nov. (3, holotype and 4, paratype); 5–6, *Intibia niponica*. 1, 3 and 5: male; 2, 4 and 6: female.

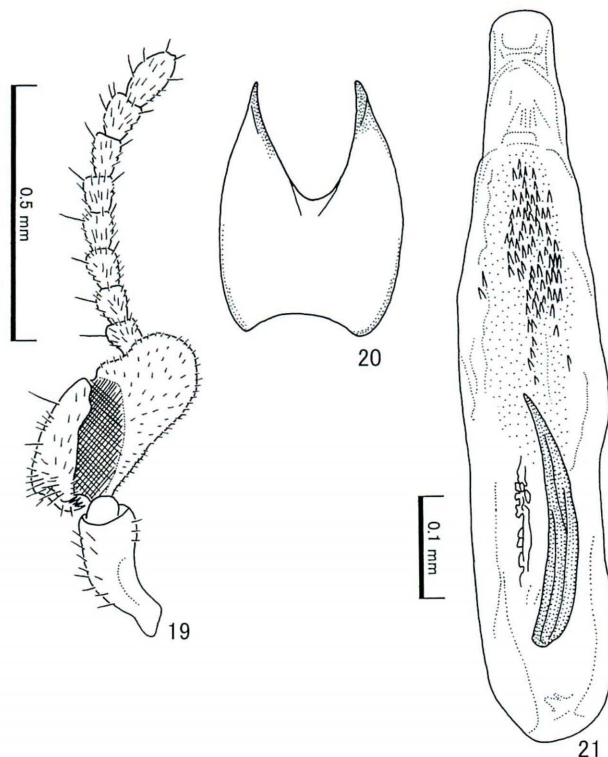
lia and antennae on slide no. HY 1036. Paratypes: 7♀♀, same data as for the holotype, slide no. HY 1037.

*Description.* Male. Length: 3.8 mm; breadth: 1.7 mm. Body oblong, almost black, sometimes tinged with weak bluish luster on pronotum and with bluish luster on elytra. Mouth parts yellowish brown; three basal segments of antennae yellowish orange. Dorsal surface covered closely with whitish pubescence, intermixed with sparse

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Figs. 7–18. *Laius etsukoae* sp. nov. (7, 9, 11, 13, 15, 17) and *Laius keiichii* sp. nov. (8, 10, 12, 14, 16, 18). — 7–8: Male antenna; 9–10, 3rd segment of male antenna; 11–12, female antenna; 13–14, 8th tergite; 15–16, spiculum; 17–18, aedeagus.





Figs. 19–21. *Intibia niponica* (LEWIS). — 19, Male antenna; 20, spiculum; 21, aedeagus.

and rather long blackish bristles. Ventral surface and legs closely covered with whitish pubescence.

Head with eyes narrower than pronotum, almost as broad as long, closely and finely punctate; vertex somewhat flattened. Eyes lateral, separated from each other by about 4.0 times their own diameter. Antennae stout, 1st segment the longest, about 3.3 times as long as broad, lightly expanded terminally; 2nd hidden; 3rd about 1.5 times as long as broad; 4th to 11th moniliform.

Pronotum narrower than elytra, about 1.3 times as broad as long, broadest at about apical third, lateral sides gently rounded; each angle rounded; surface closely and finely punctate.

Elytra about 1.5 times as long as broad, broadest at the apical third, lateral sides gradually expanded posteriad; surface sparsely and shallowly punctate, integument micro-reticulate.

Apical margin of 8th tergite clearly concave. Aedeagus stout; median lobe gently tapered, with slightly concave apex; spine curved distinctly; spiculum wide, with obtuse apices.

*Female.* Length: 4.1 mm; breadth: 1.8 mm. Antennae rather slender, 1st

segment the longest, about 2.1 times as long as broad, 3rd somewhat simple, about 1.3 times as long as broad. Pronotum about 1.3 times as broad as long. Elytra about 1.4 times as long as broad.

*Distribution.* Caroline, Palau (Peleliu).

*Remarks.* This species is closely related to *Laius etsukoae* sp. nov., but can be separated from it by the 3rd segment of the antennae somewhat larger, apical margin of 8th tergite concave, the spiculum wide with obtuse apices, and the aedeagus stout with curved spine.

*Etymology.* The specific name is given after Dr. Keiichi TAKAHASHI, who supported us in collecting trips on every occasion.

*Intibia yapensis* (WITTMER), comb. nov.

*Laius yapensis* WITTMER, 1970, Ins. Micrones., 16: 280 [Yap].

*Specimens examined.* 6♀♀, Peleliu Is., Palau, 26-X-2002, K. TAKAHASHI leg.; 3♂♂, 6♀♀, ditto, 13~17-VIII-2003, K. TAKAHASHI leg.; 1♂, 14♀♀, ditto, M. SATÔ leg.; 3♂♂, 1♀, Carp Is., Palau, 13-V-2003, K. TAKAHASHI leg.; 4♂♂, Sonsorol Is., Palau, 4-VII-2003, K. TAKAHASHI leg.; 19♂♂, 6♀♀, Merir Is., Palau, 24-XII-2002, K. TAKAHASHI leg.

*Distribution.* Caroline, Palau (Yap Is., Peleliu Is., Sonsorol Is., Merir Is.).

*Notes.* The protibia of this species is simple as shown in the key, so that this should belong to the genus *Intibia*. It is recorded newly from Peleliu Is., Sonsorol Is. and Merir Is. of Palau.

*Intibia palauensis* (WITTMER), comb. nov.

*Laius palauensis* WITTMER, 1970, Ins. Micrones., 16: 279 [Babelthuap].

*Specimens examined.* No additional material examined.

*Distribution.* Caroline, Palau (Babeldaob, Korol, Nganiangl Atoll, Kayangel Atoll, Fais Atoll)

*Notes.* According to the original description, this species is very closely related to *Intibia yapensis*, so that this also belongs to the genus *Intibia*.

*Intibia niponica* (LEWIS)

(Figs. 5, 6, 19–21)

*Laius niponicus* LEWIS, 1899, Ann. Mag. nat. Hist., (6), 16: 116 [Hakodate and Kobé].

*Intibia* sp.: OHBAYASHI *et al.*, 2004, Ogasawara Rese., (29): 40 [Yome-jima].

*Specimens examined.* 2♂♂, 6♀♀, Yome-jima, Ogasawara Is. (Bonin Is.), 15-IV-2000, T. OHBAYASHI leg.

*Distribution.* Ogasawara (Is. Yome-jima), Japan (Hokkaido, Honshu, Shikoku,



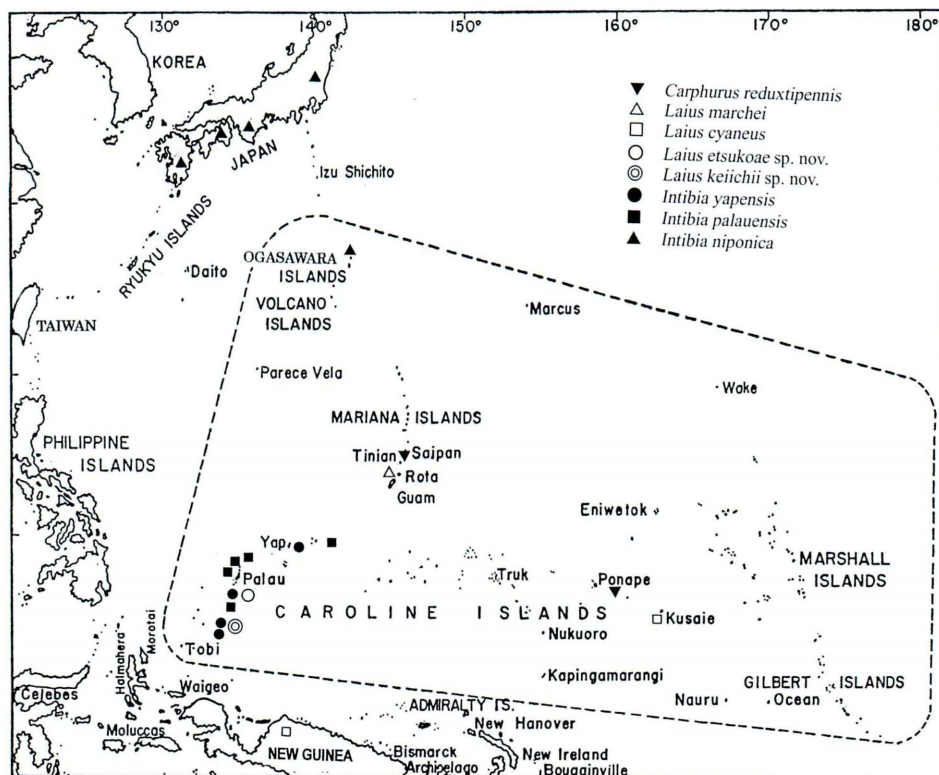


Fig. 22. Map showing distribution of melyrid beetles in Micronesia.

Kyushu).

*Notes.* Though this species is widely distributed to sandy sea shores in Japan, Is. Yome-jima of the Ogasawara Islands is the first recorded habitat. The male genitalia are illustrated for the first time.

### Biological Notes

The habitat and life cycle of respective species belonging to the genera *Carphurus* and *Intibia* are not so comprehensively known. *Intibia yapensis* was collected from bushes by beating method, and *Intibia niponica* was collected from sandy beaches adjacent to grass roots.

On the other hand, the habitat and life cycle of *Laius* species are known to some extent. The adults fly to the sea weed on rocks on fine days. Larvae live in the crevices of rocks, and attack and eat small Arthropoda.

Most islands of Micronesia are scattered on the wide Pacific Ocean, and each island is widely distant from the others. These islands with various processes of formation, are mostly situated in the tropical region on raised coral reefs. This kind of



environment seems to offer favourable conditions for *Laius* species.

How such wide distribution covering a long distance has been formed? Presumably, as was mentioned above, the sea shore species indicated on the map may have been spread over the sea by tidal current. The same or allied species must have spread from island to island by drifting on the current like hopping stepping stones. Either attached to the floating wood or some other objects drifting on the sea or carried by winds, they probably moved from south to north according to the climatic conditions eventually found their habitat in the blank niche. The distribution of them is as shown in Fig. 22.

### 要 約

佐藤正孝・吉富博之・大林隆司：ミクロネシアのジョウカイモドキの覚書。—— ミクロネシアから3属8種のジョウカイモドキを記録した。そのうち、*Laius* 属の2種、*L. etsukoe* と *L. keiichii* を新種として記載した。*Laius palauensis* WITTMER と *L. yapensis* WITTMER は、*Intibia* 属に移属した。また、ミクロネシアから記録されている3属の検索表を示した。

### References

- WITTMER, W., 1958. Coleoptera: Lampyridae, Cantharidae, Malachiidae, and Prionoceridae. *Insects of Micronesia*, **16**: 67-74.  
——— 1970. Coleoptera: Malachiidae, Supplement. *Ibid.*, **16**: 279-280.